PEER REVIEW HISTORY

ARTICLE DETAILS

TITLE (PROVISIONAL)	A systematic analysis of United Kingdom cancer research funding by gender of primary investigator
AUTHORS	Zhou, Charlie; Head, Michael; Marshall, Dominic; Gilbert, Barnabas; El-Harasis, Majd; Raine, Rosalind; O'Connor, Henrietta; Atun, Rifat; Maruthappu, Mahiben

VERSION 1 – REVIEW

REVIEWER	Sabine Oertelt-Prigione Charité - Universitätsmedizin, Berlin, Germany
REVIEW RETURNED	25-Jul-2017

GENERAL COMMENTS	In the following manuscript Zhou and colleagues analyze funding trends in cancer research in the UK by gender. In all analyzed categories, males obtain more funding than female PIs, both in terms of absolute funding as well as mean and median values. Furthermore, males appear to be more successful overall in funding acquisition than females. While this information is very relevant in describing the overall funding discrepancies between female and male researchers and in pointing at potential structural issues in the funding allocation system, it does not allow objectively assessing any fundamental bias. The data is merely descriptive and it is not possible to identify any fundamental imbalance or inequity in funding since none of the necessary information is available. As the authors state themselves in the limitations of the study, they offer no insight into the overall number of grants submitted by female and male PIs in each analyzed section, nor do we know the extent of the pool of eligible applicants for each grant call. Without this information, the reported gender differences might be a mere representation of differences in application. The same applies to the granted sums; without any knowledge of the funds applied for, I cannot judge whether women simply got less funding because they applied for less. Although, I do agree with the authors in assuming that there is a structural bias in the system and that women are disadvantaged in the granting process - and I would greatly appreciate sound data to back this up -, the currently presented information does not help. Unfortunately, I cannot make any serious deduction without knowing the N of any given study population. If none of the additional needed information can be gathered (e.g. at least information about the pool of potentially eligible researchers in the field, which might allow for some ecological comparison), the data is potentially more harmful than helpful. Hence, in the current format, I would advise against publication.

REVIEWER	Susan E. Cozzens Georgia Institute of Technology USA
REVIEW RETURNED	02-Sep-2017

GENERAL COMMENTS	Some of the material in the discussion section would be appropriately included in the literature review at the start of the article. There are just one or two grammatical ellipses that you should pick up before publication. The lack of information on seniority and track record of proposers is an important gap. You should say more about this when you talk about limitations.

VERSION 1 – AUTHOR RESPONSE

Reviewer 1's comments:
In the following manuscript Zhou and colleagues analyze funding trends in cancer research in the UK by gender. In all analyzed categories, males obtain more funding than female PIs, both in terms of absolute funding as well as mean and median values. Furthermore, males appear to be more successful overall in funding acquisition than females.
While this information is very relevant in describing the overall funding discrepancies between female and male researchers and in pointing at potential structural issues in the funding allocation system, it does not allow objectively assessing any fundamental bias. The data is merely descriptive and it is not possible to identify any fundamental imbalance or inequity in funding since none of the necessary information is available.

Authors' response:
We agree with the reviewer's comments. This is a purely descriptive study that attempts to quantify the funding discrepancies in cancer research by gender. It does not and cannot assess any factors or fundamental bias that might underlie these discrepancies. Whilst we would like to test for factors that might equate to gender inequity, these data are not available for this study. Because of this, we believe it important that this study (and others like it) is published so that it can highlight this lack of data. We hope to encourage funding bodies to publish their data to allow for in-depth analyses that can lead to targeted interventions. [Discussion, para 2, 7]

Reviewer 1's comments:
As the authors state themselves in the limitations of the study, they offer no insight into the overall number of grants submitted by female and male PIs in each analyzed section, nor do we know the extent of the pool of eligible applicants for each grant call. Without this information, the reported gender differences might be a mere representation of differences in application. The same applies to the granted sums; without any knowledge of the funds applied for, I cannot judge whether women simply got less funding because they applied for less.

Authors' response:
We have highlighted this limitation more clearly in our revised manuscript. This study reports a difference in funding by gender, however we are unable to assess whether it is merely due to differences in application or otherwise. We do not believe that this detracts from the central message of the study – that differences in funding do exist and that quantification of these differences adds to the overall evidence base. [Discussion, para 3, 6]

Reviewer 1's comments:
Although, I do agree with the authors in assuming that there is a structural bias in the system and that women are disadvantaged in the granting process - and I would greatly appreciate sound data to back this up -, the currently presented information does not help. Unfortunately, I cannot make any serious deduction without knowing the N of any given study population. If none of the additional needed information can be gathered (e.g. at least information about the pool of potentially eligible researchers in the field, which might allow for some ecological comparison), the data is potentially more harmful than helpful. Hence, in the current format, I would advise against publication.

Authors' response:
We assume that systemic gender bias may be responsible for our observations as there is already a body of evidence that supports this. Our study cannot assess if there is systemic gender bias present in cancer research, instead, it quantifies apparent funding discrepancies. We expand upon this in the revised manuscript and further describe current policy-level attempts to rectify any gender bias. [Discussion, para 5]
We would argue that, because of these aforementioned points, it is important that these results are published and available for scrutiny.

Reviewer 2's comments:
Some of the material in the discussion section would be appropriately included in the literature review at the start of the article. There are just one or two grammatical ellipses that you should pick up before publication. The lack of information on seniority and track record of proposers is an important gap. You should say more about this when you talk about limitations.

Authors' response:
We have moved some of the discussion material into the introduction and background. We have tried to rectify any grammatical mistakes. We highlight the lack of information on seniority and track record in our discussion. [Introduction, para 1, 2, Discussion, para 3]